

WHAT IS CLAIMED IS:

1 1. A personal authentication system using biometrics  
2 information, which identifies or authenticates an individual  
3 using biometrics information, comprising:

4 a biometrics information inputting section having a  
5 function to acquire biometrics information;

6 a biometrics information converting section for  
7 converting said biometrics information, acquired through said  
8 biometrics information inputting section, into a state to be  
9 acquired on a predetermined acquisition condition; and

10 a biometrics characteristic data extracting section for  
11 extracting biometrics characteristic data from the biometrics  
12 information obtained by the conversion in said biometrics  
13 information converting section.

1 2. A personal authentication system using biometrics  
2 information according to claim 1, wherein said biometrics  
3 information inputting section is of a type acquiring said  
4 biometrics information as image data, and said biometrics  
5 information converting section converts said biometrics  
6 information, acquired through said biometrics information  
7 inputting section, into image data with a predetermined  
8 resolution included in said predetermined acquisition  
9 condition.

1 3. A personal authentication system using biometrics

2 information according to claim 1, wherein said biometrics  
3 information inputting section is of a type acquiring said  
4 biometrics information as image data, and said biometrics  
5 information converting section converts said biometrics  
6 information, acquired through said biometrics information  
7 inputting section, into image data with a predetermined  
8 resolution and predetermined numbers of pixels in vertical and  
9 horizontal directions, included in said predetermined  
10 acquisition condition.

1 4. A personal authentication system using biometrics  
2 information according to claim 1, wherein said biometrics  
3 information inputting section is of a type acquiring said  
4 biometrics information as image data, and said biometrics  
5 information converting section converts said biometrics  
6 information, acquired through said biometrics information  
7 inputting section, into image data with a predetermined image  
8 characteristic included in said predetermined acquisition  
9 condition.

1 5. A personal authentication system using biometrics  
2 information according to claim 1, wherein said biometrics  
3 information inputting section is of a type acquiring said  
4 biometrics information as time series data, and said biometrics  
5 information converting section converts said biometrics  
6 information, acquired through said biometrics information  
7 inputting section, into time series data with a predetermined

8 sampling period included in said predetermined acquisition  
9 condition.

1 6. A personal authentication system using biometrics  
2 information according to claim 1, wherein said biometrics  
3 information inputting section is of a type acquiring  
4 fingerprint information as said biometrics information in the  
5 form of image data, and said biometrics information converting  
6 section converts said fingerprint information, acquired  
7 through said biometrics information inputting section, into  
8 image data with a predetermined relationship in brightness  
9 between ridge lines and trough lines, included in said  
10 predetermined acquisition condition.

1 7. A personal authentication system using biometrics  
2 information according to claim 6, wherein a brightness  
3 relationship judging section is provided to judge a  
4 relationship in brightness between ridge lines and trough lines  
5 in said fingerprint information acquired through said  
6 biometrics information inputting section, and said biometrics  
7 information converting section conducts conversion processing  
8 of image data in accordance with the judgment of the brightness  
9 relationship judging section.

1 8. A personal authentication system using biometrics  
2 information, which identifies or authenticates an individual  
3 using biometrics information, comprising:

4        a biometrics information inputting section having a  
5        function to acquire biometrics information;

6        a biometrics characteristic data extracting section for  
7        extracting biometrics characteristic data from the biometrics  
8        information acquired through said biometrics information  
9        inputting section;

10       an acquisition condition attaching section for  
11       attaching, to said biometrics information to be inputted from  
12       said biometrics information inputting section to said  
13       biometrics characteristic data extracting section, an  
14       acquisition condition related to said biometrics information;  
15       and

16       a biometrics information converting section for, before  
17       the extraction of said biometrics characteristic data from said  
18       biometrics information in said biometrics characteristic data  
19       extracting section, converting said biometrics information  
20       into a state to be acquired on a predetermined acquisition  
21       condition, in accordance with said acquisition condition  
22       attached to said biometrics information.

1       9.       A personal authentication system using biometrics  
2       information according to claim 8, wherein said biometrics  
3       information inputting section is of a type acquiring said  
4       biometrics information as image data, and said acquisition  
5       condition attaching section attaches a resolution as said  
6       acquisition condition to said biometrics information, and said  
7       biometrics information converting section converts said

8 biometrics information into image data with a predetermined  
9 resolution on the basis of said resolution attached to said  
10 biometrics information.

1 10. A personal authentication system using biometrics  
2 information according to claim 8, wherein said biometrics  
3 information inputting section is of a type acquiring said  
4 biometrics information as image data, and said acquisition  
5 condition attaching section attaches a resolution and the  
6 numbers of pixels in vertical and horizontal directions, as  
7 said acquisition condition, to said biometrics information,  
8 and said biometrics information converting section converts  
9 said biometrics information into image data with a  
10 predetermined resolution and predetermined numbers of pixels  
11 in vertical and horizontal directions, on the basis of the  
12 resolution and the numbers of pixels in vertical and horizontal  
13 directions attached to said biometrics information.

1 11. A personal authentication system using biometrics  
2 information according to claim 8, wherein said biometrics  
3 information inputting section is of a type acquiring said  
4 biometrics information as time series data, and said  
5 acquisition condition attaching section attaches a sampling  
6 period as said acquisition condition to said biometrics  
7 information, and said biometrics information converting  
8 section converts said biometrics information into time series  
9 data with a predetermined sampling period, on the basis of said

10 sampling period attached to said biometrics information.

1 12. A personal authentication system using biometrics  
2 information according to claim 8, wherein said biometrics  
3 information inputting section is of a type acquiring  
4 fingerprint information as said biometrics information in the  
5 form of image data, and said acquisition condition attaching  
6 section attaches, to said fingerprint information as said  
7 acquisition condition, a relationship in brightness between  
8 ridge lines and trough lines in said fingerprint information,  
9 and said biometrics information converting section converts  
10 said fingerprint information into image data with a  
11 predetermined brightness relationship, on the basis of said  
12 brightness relationship attached to said fingerprint  
13 information.

1 13. A personal authentication system using biometrics  
2 information, which identifies or authenticates an individual  
3 using biometrics information, comprising:

4 a biometrics information inputting section having a  
5 function to acquire biometrics information;

6 a biometrics characteristic data extracting section for  
7 extracting biometrics characteristic data from said  
8 biometrics information acquired through said biometrics  
9 information inputting section;

10 a biometrics characteristic data registering section  
11 for previously preserving registration biometrics

12 characteristic data extracted from biometrics information;  
13 a biometrics characteristic data verifying section for  
14 verifying that verification biometrics characteristic data on  
15 a person forming a subject of verification, obtained through  
16 said biometrics information inputting section and said  
17 biometrics characteristic data extracting section, matches  
18 said registration biometrics characteristic data on the same  
19 verification person registered and preserved previously in  
20 said biometrics characteristic data registering section;

21 an acquisition condition attaching section for  
22 attaching, to biometrics characteristic data to be inputted  
23 from said biometrics characteristic data extracting section  
24 to said biometrics characteristic data registering section or  
25 said biometrics characteristic data verifying section, an  
26 acquisition condition related to the biometrics information  
27 being an extraction source of said biometrics characteristic  
28 data; and

29 a biometrics characteristic data converting section for,  
30 before the verifying that said verification biometrics  
31 characteristic data matches said registration biometrics  
32 characteristic data in said biometrics characteristic data  
33 verifying section, converting at least one of said verification  
34 biometrics characteristic data and said registration  
35 biometrics characteristic data in accordance with said  
36 acquisition condition attached to said verification  
37 biometrics characteristic data and said registration  
38 biometrics characteristic data to convert said verification

39 biometrics characteristic data and said registration  
40 biometrics characteristic data into data to be obtained on the  
41 same acquisition condition.

1 14. A personal authentication system using biometrics  
2 information, which identifies or authenticates an individual  
3 using biometrics information, comprising:

4 a biometrics information inputting section having a  
5 function to acquire biometrics information;

6 a biometrics characteristic data extracting section for  
7 extracting biometrics characteristic data from said  
8 biometrics information acquired through said biometrics  
9 information inputting section;

10 a biometrics characteristic data registering section  
11 for previously preserving registration biometrics  
12 characteristic data extracted from biometrics information;

13 a biometrics characteristic data verifying section for  
14 verifying that verification biometrics characteristic data on  
15 a person forming a subject of verification, obtained through  
16 said biometrics information inputting section and said  
17 biometrics characteristic data extracting section, matches  
18 said registration biometrics characteristic data on the same  
19 verification person registered and preserved previously in  
20 said biometrics characteristic data registering section;

21 a verification mode version attaching section for  
22 attaching, to biometrics characteristic data to be inputted  
23 from said biometrics characteristic data extracting section

24 to said biometrics characteristic data registering section or  
25 said biometrics characteristic data verifying section, a  
26 version of verification mode related to said biometrics  
27 characteristic data; and

28 a biometrics characteristic data converting section for,  
29 before verifying that said verification biometrics  
30 characteristic data matches said registration biometrics  
31 characteristic data in said biometrics characteristic data  
32 verifying section, converting at least one of said verification  
33 biometrics characteristic data and said registration  
34 biometrics characteristic data on the basis of said  
35 verification mode version attached to said verification  
36 biometrics characteristic data and said registration  
37 characteristic data to convert said verification biometrics  
38 characteristic data and said registration biometrics  
39 characteristic data into data corresponding to the same  
40 verification mode version.

1 15. A personal authentication system using biometrics  
2 information, which identifies or authenticates an individual  
3 using biometrics information, comprising:

4 a biometrics information inputting section having a  
5 function to acquire biometrics information;

6 a biometrics characteristic data extracting section for  
7 extracting biometrics characteristic data from said  
8 biometrics information acquired through said biometrics  
9 information inputting section;

10        a biometrics characteristic data registering section  
11    for previously preserving registration biometrics  
12   characteristic data extracted from biometrics information;  
13        a biometrics characteristic data verifying section for  
14   verifying that verification biometrics characteristic data on  
15   a person forming a subject of verification, obtained through  
16   said biometrics information inputting section and said  
17   biometrics characteristic data extracting section, matches  
18   said registration biometrics characteristic data on the same  
19   verification person registered and preserved previously in  
20   said biometrics characteristic data registering section; and  
21        a biometrics characteristic data converting section for,  
22   when a change of verification mode in said biometrics  
23   characteristic data verifying section takes place, converting  
24   collectively all registration biometrics characteristic data,  
25   registered in said biometrics characteristic data registering  
26   section, into biometrics characteristic data corresponding to  
27   the verification mode after the change.

1   16. A personal authentication system using biometrics  
2   information, which identifies or authenticates an individual  
3   using biometrics information, comprising:

4        a biometrics information inputting section having a  
5   function to acquire biometrics information;

6        a biometrics characteristic data extracting section for  
7   extracting biometrics characteristic data from said  
8   biometrics information acquired through said biometrics

9 information inputting section;  
10 a biometrics characteristic data registering section  
11 for previously preserving auxiliary biometrics characteristic  
12 data besides biometrics characteristic data essential to the  
13 identification and authentication as registration biometrics  
14 characteristic data extracted from biometrics information;  
15 and

16 a biometrics characteristic data restructuring section  
17 for, when a change of kind of said biometrics characteristic  
18 data to be used for the identification and authentication takes  
19 place, restructuring new registration biometrics  
20 characteristic data according to the change through the use  
21 of the essential biometrics characteristic data and said  
22 auxiliary biometrics characteristic data.

1 17. A personal authentication system using biometrics  
2 information, which identifies or authenticates an individual  
3 using biometrics information, comprising:

4 a biometrics information inputting section having a  
5 function to acquire biometrics information;

6 a biometrics characteristic data extracting section for  
7 extracting biometrics characteristic data from said  
8 biometrics information acquired through said biometrics  
9 information inputting section;

10 a biometrics characteristic data registering section  
11 for previously preserving registration biometrics  
12 characteristic data extracted from said biometrics

13 information and said biometrics information being an  
14 extraction source of said registration biometrics  
15 characteristic data; and

16 a biometrics characteristic data restructuring section  
17 for, when a change of kind of the biometrics characteristic  
18 data to be used for the identification and authentication takes  
19 place, extracting and restructuring new registration  
20 biometrics characteristic data from said biometrics  
21 information being the extraction source of said registration  
22 biometrics characteristic data according to the change.

1 18. A personal authentication system using biometrics  
2 information according to claim 16, further comprising:

3 a biometrics characteristic data verifying section made  
4 to handle a plurality of verification modes, for verifying that  
5 verification biometrics characteristic data on a person  
6 forming a subject of verification, obtained through said  
7 biometrics information inputting section and said biometrics  
8 characteristic data extracting section, matches registration  
9 biometrics characteristic data on the same subject person,  
10 previously registered and preserved in said biometrics  
11 characteristic data registering section; and

12 a verification mode version attaching section for  
13 attaching, to biometrics characteristic data to be inputted  
14 from said biometrics characteristic data extracting section  
15 to said biometrics characteristic data registering section or  
16 said biometrics characteristic data verifying section, a

17 verification mode version related to said biometrics  
18 characteristic data,

19 when verification mode versions respectively attached  
20 to said verification biometrics characteristic data and the  
21 registration biometrics characteristic data between which  
22 verification is made in said biometrics characteristic data  
23 verifying section does not agree with each other, said  
24 biometrics characteristic data restructuring section  
25 restructuring one of said verification biometrics  
26 characteristic data and said registration biometrics  
27 characteristic data into biometrics characteristic data  
28 needed for a verification mode corresponding to the  
29 verification mode version for the other biometrics  
30 characteristic data.

1 19. A personal authentication system using biometrics  
2 information according to claim 17, further comprising:  
3 a biometrics characteristic data verifying section made  
4 to handle a plurality of verifying modes, for verifying that  
5 verification biometrics characteristic data on a person  
6 forming a subject of verification, obtained through said  
7 biometrics information inputting section and said biometrics  
8 characteristic data extracting section, matches registration  
9 biometrics characteristic data on the same subject person,  
10 previously registered and preserved in said biometrics  
11 characteristic data registering section; and  
12 a verification mode version attaching section for

13 attaching, to biometrics characteristic data to be inputted  
14 from said biometrics characteristic data extracting section  
15 to said biometrics characteristic data registering section or  
16 said biometrics characteristic data verifying section, a  
17 verification mode version related to said biometrics  
18 characteristic data,

19 when verification mode versions respectively attached  
20 to said verification biometrics characteristic data and the  
21 registration biometrics characteristic data between which  
22 verification is made in said biometrics characteristic data  
23 verifying section does not agree with each other, said  
24 biometrics characteristic data restructuring section  
25 restructuring one of said verification biometrics  
26 characteristic data and said registration biometrics  
27 characteristic data into biometrics characteristic data  
28 needed for a verification mode corresponding to the  
29 verification mode version for the other biometrics  
30 characteristic data.

1 20. A personal authentication system using biometrics  
2 information, which identifies or authenticates an individual  
3 using biometrics information, comprising:

4 a verification mode version attaching section for  
5 attaching a verification mode version to biometrics  
6 characteristic data extracted from said biometrics  
7 information; and

8 a biometrics characteristic data verifying section for

9 performing verification processing using said biometrics  
10 characteristic data in a verification mode corresponding to  
11 said verification mode version attached to said biometrics  
12 characteristic data.

1 21. A personal authentication system using biometrics  
2 information, which identifies or authenticates an individual  
3 using biometrics information, comprising:

4 a biometrics information inputting section having a  
5 function to acquire biometrics information;  
6 a biometrics characteristic data extracting section for  
7 extracting biometrics characteristic data, to be needed in a  
8 plurality of verification modes, from biometrics information  
9 acquired through said biometrics information inputting  
10 section;

11 a biometrics characteristic data registering section  
12 for previously preserving registration biometrics  
13 characteristic data extracted from biometrics information;

14 a biometrics characteristic data verifying section made  
15 to handle a plurality of verification modes, for verifying that  
16 verification biometrics characteristic data on a person  
17 forming a subject of verification, obtained through said  
18 biometrics information inputting section and said biometrics  
19 characteristic data extracting section, matches registration  
20 biometrics characteristic data on the same subject person,  
21 previously preserved in said biometrics characteristic data  
22 registering section; and

23           a verification mode version attaching section for  
24 attaching, to registration biometrics characteristic data to  
25 be inputted from said biometrics characteristic data  
26 extracting section to said biometrics characteristic data  
27 registering section, a verification mode version related to  
28 said registration biometrics characteristic data,

29           wherein said biometrics characteristic data extracting  
30 section extracts, as said verification biometrics  
31 characteristic data, biometrics characteristic data to be  
32 needed in a verification mode corresponding to the verification  
33 mode version attached to said registration biometrics  
34 characteristic data, from the biometrics information acquired  
35 through said biometrics information inputting section.

1   22. A personal authentication system using biometrics  
2 information according to claim 21, wherein said biometrics  
3 characteristic data verifying section verifies that said  
4 registration biometrics characteristic data matches said  
5 verification biometrics characteristic data extracted by said  
6 biometrics characteristic data extracting section, and when  
7 a verification result of said biometrics characteristic data  
8 verifying section shows a matching rate equal to or larger than  
9 a predetermined value and said verification mode version is  
10 older than a predetermined version, said biometrics  
11 characteristic data extracting section extracts biometrics  
12 characteristic data for the latest verification mode from said  
13 biometrics information so that the extracted biometrics

14 characteristic data is re-registered as new registration  
15 biometrics characteristic data in said biometrics  
16 characteristic data registering section.

1 23. A personal authentication system using biometrics  
2 information, which identifies or authenticates an individual  
3 using biometrics information, comprising:

4 a biometrics information inputting section having a  
5 function to acquire biometrics information;

6 a biometrics characteristic data extracting section for  
7 extracting biometrics characteristic data from biometrics  
8 information acquired through said biometrics information  
9 inputting section;

10 a biometrics characteristic data registering section  
11 for previously preserving registration biometrics  
12 characteristic data extracted from biometrics information,

13 a biometrics characteristic data verifying section made  
14 to handle a plurality of verification modes, for verifying that  
15 verification biometrics characteristic data on a person  
16 forming a subject of verification, obtained through said  
17 biometrics information inputting section and said biometrics  
18 characteristic data extracting section, matches registration  
19 biometrics characteristic data on the same subject person,  
20 previously registered and preserved in said biometrics  
21 characteristic data registering section; and

22 a verification mode version attaching section for  
23 attaching, to biometrics characteristic data to be inputted

24 from said biometrics characteristic data extracting section  
25 to said biometrics characteristic data registering section and  
26 said biometrics characteristic data verifying section, a  
27 verification mode version related to said biometrics  
28 characteristic data,

29 wherein said biometrics characteristic data extracting  
30 section extracts separately dependence data depending on a  
31 verification mode and common data to be used in common among  
32 all verification modes without depending on a verification  
33 mode,

34 while, when the verification mode version attached to  
35 said verification biometrics characteristic data does not  
36 match the verification mode version attached to said  
37 registration biometrics characteristic data, said biometrics  
38 characteristic data verifying section conducts the  
39 verification using said common data in said verification  
40 biometrics characteristic data and said registration  
41 biometrics characteristic data.

1 24. A client-server type personal authentication system in  
2 which a client side extracts verification biometrics  
3 characteristic data from biometrics information on an  
4 individual while a server side performs biometrics  
5 characteristic data for identification and authentication of  
6 said individual,

7 said client side comprising:

8 a biometrics information inputting section having a

9       function to acquire biometrics information;  
10        a biometrics characteristic data extracting section for  
11 extracting biometrics characteristic data, to be needed in a  
12 plurality of verification modes, from biometrics information  
13 acquired through said biometrics information inputting  
14 section; and

15       a verification mode version attaching section for  
16 attaching, to registration biometrics characteristic data to  
17 be sent from said biometrics characteristic data extracting  
18 section to said server side, a verification mode version  
19 related to said registration biometrics characteristic data,

20       while said server side comprising:

21       a biometrics characteristic data registering section  
22 for previously preserving said registration biometrics  
23 characteristic data from said client side together with said  
24 verification mode version; and

25       a biometrics characteristic data verifying section made  
26 to handle a plurality of verification modes, for verifying that  
27 verification biometrics characteristic data on a person  
28 forming a subject of verification from said client side matches  
29 registration biometrics characteristic data on the same  
30 subject person previously preserved in said biometrics  
31 characteristic data registering section,

32       wherein said verification mode version attached to said  
33 registration biometrics characteristic data is communicated  
34 from said server side to said biometrics characteristic data  
35 extracting section on said client side, and said biometrics

36 characteristic data extracting section extracts biometrics  
37 characteristic data, to be needed in a verification mode  
38 corresponding to said verification mode version communicated  
39 from said server side, as said verification biometrics  
40 characteristic data from biometrics information acquired  
41 through said biometrics information inputting section.

1 25. A client-server type personal authentication system in  
2 which a client side extracts verification biometrics  
3 characteristic data from biometrics information on an  
4 individual while a server side verifies biometrics  
5 characteristic data for identification and authentication of  
6 the individual,

7 said client side comprising:

8 a biometrics information inputting section having a  
9 function to acquire biometrics information;

10 a biometrics characteristic data extracting section for  
11 extracting biometrics characteristic data from biometrics  
12 information acquired through said biometrics information  
13 inputting section; and

14 an acquisition condition attaching section for  
15 attaching, to registration biometrics characteristic data to  
16 be sent from said biometrics characteristic data extracting  
17 section to said server side, an acquisition condition related  
18 to said registration biometrics characteristic data in said  
19 biometrics information inputting section,

20 while said server side comprising:

21        a biometrics characteristic data registering section  
22 for previously preserving said registration biometrics  
23 characteristic data from said client side together with said  
24 acquisition condition; and

25        a biometrics characteristic data verifying section for  
26 verifying that verification biometrics characteristic data on  
27 a person forming a subject of verification from said client  
28 side matches registration biometrics characteristic data on  
29 the same subject person previously preserved in said biometrics  
30 characteristic data registering section,

31        wherein said acquisition condition attached to said  
32 registration biometrics characteristic data is communicated  
33 from said server side to said biometrics characteristic data  
34 extracting section on said client side, and said biometrics  
35 characteristic data extracting section extracts biometrics  
36 characteristic data under said acquisition condition  
37 communicated from the server side, as said verification  
38 biometrics characteristic data from biometrics information  
39 acquired through said biometrics information inputting  
40 section.